

## ACKNOWLEDGMENTS

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## First Report of Black Terns Breeding on a Coastal Barrier Island

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**ABSTRACT.**—Black Terns (*Chlidonias niger surinamensis*) breed locally in freshwater wetlands across the northern United States and central Canada, often building their nests over shallow water on a floating substrate of matted marsh vegetation. Here, we report the first nesting record of this species on a coastal barrier island. The nest, which consisted of two eggs laid in a slight scrape of sand, was located on 6 July 2004 in a large breeding colony of Common Terns (*Sterna hirundo*) on Kelly's Island at Kouchibouguac National Park, New Brunswick, Canada. The observation also represents the current northeastern breeding limit for this species in North America. Both eggs hatched, but

neither chick survived beyond 4 days. Received 15 December 2004, accepted 5 October 2005.

The North American subspecies of Black Tern (*Chlidonias niger surinamensis*) breeds locally across the northern United States and central Canada. Black Terns are semicolonial, typically nesting in productive, shallow freshwater marshes, semipermanent ponds, prairie sloughs, and along margins of lakes and rivers (Stewart and Kantrud 1984, Dunn and Agro 1995, Schummer and Eddleman 2003). Nests are generally placed in areas of calm water within stands of emergent bulrush (*Scirpus* spp.), cattail (*Typha* spp.), bur-reed (*Sparganium* spp.), or pickerelweed (*Pontederia cordata*; Cuthbert 1954, Dunn 1979, Mazzocchi et

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al. 1997). Nests are usually built over shallow water (0.5–1.2 m deep) on a floating substrate of matted, dead marsh vegetation, floating root-stalks and discarded pieces of wood, or muskrat feeding platforms; occasionally, nests are built on non-floating substrates, including muskrat lodges, flattened vegetation, and mud (Cuthbert 1954, Bergman et al. 1970, Dunn 1979). Nests often consist of dead vegetation arranged in a compressed pile with a shallow depression at the top (Dunn and Agro 1995).

Black Terns use coastal habitats during migration, winter, and in summer when non-breeding birds aggregate in large flocks (100+ birds) on salt pans, marshes, estuaries, and brackish wetlands (Dunn and Agro 1995). Reports of Black Terns breeding in marine areas are extremely rare (Sirois and Fournier 1993). In the mid-1990s, a single nest was found at Seal Island National Wildlife Refuge (NWR), Rockland, Maine (C. S. Hall pers. comm.), and in both 2003 and 2004, two nests were located at Machias Seal Island, New Brunswick (C. M. Develin pers. comm.). The nests at these marine sites consisted of a small amount of dead vegetation in sparse common sheep sorrel (*Rumex acetosella*) and grasses, or they were placed on a granite rock surface. Nests were located in large, mixed colonies of Common (*Sterna hirundo*) or Arctic (*S. paradisaea*) terns. The nest at Seal Island NWR was ~30 m from the high-tide line, whereas the nests at Machias Seal Island were ~100 m from water. All five Black Tern nests in marine areas failed to fledge young.

The Canadian Maritime breeding population of Black Terns was estimated to be 150 pairs (Erskine 1992), with southern New Brunswick representing the species' north-eastern breeding limit in North America (Dunn and Agro 1995). Since 2000, however, Black Terns (<4 birds annually) have been observed in mid- to late June with breeding Common Terns on four coastal barrier islands of Kouchibouguac National Park, New Brunswick. Surveys conducted from 2000 to 2003, however, did not confirm breeding (Christie et al. 2004; E. Tremblay pers. comm.).

Here, we report the first evidence of Black Terns breeding on a coastal barrier island, Kelly's Island (46° 50' N, 64° 55' W), 2 ha in size, is part of a 26-km crescent of barrier spits and islands that separate Kouchibouguac Bay of the

Northumberland Strait from the shallow estuary-lagoon system of Kouchibouguac National Park (Beach 1988). The island is composed of sand and is vegetated by extensive stands of marram grass (*Ammophila breviligulata*); the island's outer edge consists of a gently sloping intertidal beach zone. The island supports a large breeding colony of Common Terns, which included 1,041 nests counted in 2004 (Parks Canada Tern Survey 2004).

On 6 July 2004 at approximately 17:00 AST, after the entire tern colony at Kelly's Island had flushed and taken flight, we identified a pair of adult Black Terns flying above the center of the island. One of the Black Terns descended and landed, and we subsequently identified a Black Tern nest with two eggs laid in a slight scrape of sand. The long, oval eggs were noticeably smaller (~34 × 24 mm) than the subelliptical eggs in nearby Common Tern nests (~42 × 31 mm; SRC pers. obs.). The Black Tern eggs were dark olive and marked with dark brown dots and blotches, the density of which was greater near the large end. Nearby Common Tern eggs were generally cream colored and finely marked with brown and black dots. The Black Tern nest and many of the Common Tern nests consisted of a small amount of dead vegetation loosely lining a scrape made in the sand. Both species nested in areas of the island where cover was sparse (5–15% marram grass). Whereas Common Tern nests were 0.5–30 m from the high-tide line, the Black Tern nest was 26.5 m from the water. Two Common Tern nests were within 3 m of the Black Tern nest.

On 20 July at 17:20, we returned to the nest and found a newly hatched chick and a pipping egg. The hatchling's down was predominantly cinnamon and black, except for a white belly and a white mask over the eye and cheek. A single adult Black Tern was observed flying 5–10 m directly above the nest. On 24 July, we checked the nest again and found both chicks dead at the nest; one adult Black Tern was flying 10–15 m above the island. The young were necropsied, but the cause of death was undetermined (S. McBurney pers. comm.).

Adult Common Terns at Kelly's Island readily exhibited aggressive displays toward the smaller Black Tern adults. Overt aggres-

sion typically involved brief aerial chases and attack by Common Terns as a Black Tern adult approached and descended toward its nest. Common and Black terns occasionally form mixed-breeding colonies elsewhere (Snow and Perrins 1998), and Common Terns have been known to defend nesting territories against other tern species, including Roseate Terns (*Sterna dougallii*; Burger and Gochfeld 1991, Nisbet 2002). Aggressive displays by Common Terns, and the close proximity of tern nests at Kelly's Island, may have compromised the survival of the Black Tern chicks by preventing the adults from providing sufficient food resources to their young, resulting in dehydration or malnutrition (S. McBurney pers. comm.). Nevertheless, our observations represent the first confirmed breeding of Black Terns on the barrier islands of Kouchibouguac National Park and represent the northeastern breeding limit for this species in North America.

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